FTR - Flight Test Report

Manufacturer	Swing	Type testing No.	EAPR-GS-0641/17	Ret=
	Swing Flugsportgeräte GmbH An der Leiten 4 D-82290 Landsberied	serial number	1272329852	Messen Prüfen Bewerten Rev. 2.3 - 26.11.2014
Model	Apus RS 23	Location	Gardasee	EAPR GmbH - Marktstr. 11 D-87730 Bad Grönenbach - Germany
Comment		Location	Malcesine, Monte Baldo	

sweise, vervielfältigt werden.

Date of testing	24.04.2017	Minimum take 70 kg		eight	Maximum take 90 k		veight
Testpilot		Mike Küng			Pascal Purin		
Harness		EAPR			EAPR		
Pilot's take off weig	ht	70	kg	A	90	kg	

Classification A



Test-criteria		Minimum take off weight	Evaluation	Maximum take off weight	Evaluation
1. Inflation / take-off - 4.4.1					
Rising behavior		Smooth, easy and constant rising, no pilot correction required	А	Smooth, easy and constant rising, no pilot correction required	А
Special take off technique required		No	A	No	A
2. Landing - 4.4.2					
Special landing technique required		No	А	No	А
3. Speeds in straight flight - 4.4.3					
Trim speed more than 30km/h		Yes	A	Yes	A
Speed range using the controls larger than 10km/	h	Yes	А	Yes	А
Minimum speed		Less than 25 km/h	А	Less than 25 km/h	А
4. Control movement - 4.4.4					~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Max. weight in flight up to 80kg			-		-
Max. weight in flight 80 to 100kg		Increasing > 60cm	A	Increasing > 60cm	A
Max. weight in flight greater than 100kg			-		-
5. Pitch stability exiting accelerated flight - 4.	1.5				
Dive forward angle on exit		Dive forward less than 30°	A	Dive forward less than 30°	А
Collapse occurs		No	A	No	A
6. Pitch stability operating controls during acc	elerated		~	10	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Collapse occurs	oloratou	No	A	No	А
7. Roll stability and damping - 4.4.7		110			<u> </u>
Oscillations		Reducing	A	Reducing	A
8. Stability in gentle spirals - 4.4.8		Reddollig	~	Reddollig	~
Tendency to return to straight flight		Spontaneous exit	A	Spontaneous exit	A
9. Behaviour exiting a fully developed spiral d	ive - 4 4 !		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	openiario de oxí	
Initial response of glider (first 180°)		Immediate reduction of rate in turn	A	Immediate reduction of rate in turn	A
Tendency to return to straight flight		Spontaneous exit	Â	Spontaneous exit	A
Turn angle to recover normal flight		Less than 720°, spontaneous recovery	A	Less than 720°, spontaneous recovery	A
10. Symmetric front collapse - 4.4.10			•		
Folding lines used		No		No	
Entry	- 30%	Rocking back less than 45°	А	Rocking back less than 45°	А
Recovery	c ~ peeds	Spontaneous in less than 3 sec	А	Spontaneous in less than 3 sec	А
Dive forward angle on exit	trim spe	0° - 30° Keeping course	A	0° - 30° Keeping course	A
Cascade occurs	t.	No	A	No	A
Entry	20%	Rocking back less than 45°	A	Rocking back less than 45°	A
Recovery	} < paads	Spontaneous in less than 3 sec	A	Spontaneous in less than 3 sec	А
Dive forward angle on exit	trim sp	0° - 30° Keeping course	A	0° - 30° Keeping course	A
Cascade occurs		No	A	No	A
Entry	20%	Rocking back less than 45°	A	Rocking back less than 45°	A
Recovery	rate d >	Spontaneous in less than 3 sec	А	Spontaneous in less than 3 sec	А
Dive forward angle on exit Cascade occurs	accelerat	0° - 30° Keeping course No	A A	0° - 30° Keeping course No	A A
11. Exiting deep stall (parachutal stall) - 4.4.1	1				
Deep stall achieved		Yes		Yes	
Recovery		Spontaneous in less than 3 sec	А	Spontaneous in less than 3 sec	А
Dive forward angle on exit		0° - 30°	А	0° - 30°	A
Change of course		Changing course less than 45°	A	Changing course less than 45°	A
Cascade occurs		No	A	No	A

Recovery		Spontaneous in les	ss than 3 sec		A	Spontaneous in	less than 3 sec		A
Cascade occurs		No			A	No	No		
13. Recovery from a developed full stall - 4.	1.13								
Dive forward angle on exit		0° - 30°			A	0° - 30°			A
Collapse Cascade occurs (other than collapse)		No collapse No			A	No collapse No			A
Rocking backward		Less than 45°			A	Less than 45°			A
Line tension		Most lines tight			А	Most lines tight			A
14. Asymmetric collapse (trim speed) - 4.4.1	4					-			-
Folding lines used		No				No	1	1	
Change of course until re-inflation	se	< 90°	Dive or roll angle	0° - 15°	A	< 90°	Dive or roll angle	15° - 45°	A
Re-inflation behavior	trim speed, max 50% collapse	Spontaneous re-inf	flation		А	Spontaneous re-	inflation		А
Total change of course	spe % c	Less than 360°			A	Less than 360°			A
Collapse on the opposite side occurs	trim ax 50	No			A	No			A
Twist occurs	Ĕ	No			A	No			A
Cascade occurs		No			A	No			A
Change of course until re-inflation	Se	< 90°	Dive or roll angle	15° - 45°	A	< 90°	Dive or roll angle	15° - 45°	A
Re-inflation behavior	eed, collap	Spontaneous re-inf	flation		А	Spontaneous re-	inflation		А
Total change of course	n spe	Less than 360°			A	Less than 360°			A
Collapse on the opposite side occurs	trim speed, max 75% collapse	No			A	No			A
Twist occurs Cascade occurs	ε	No No			A	No No			A
					A				A
Change of course until re-inflation	se	< 90°	Dive or roll angle	0° - 15°	А	< 90°	Dive or roll angle	15° - 45°	A
Re-inflation behavior	ted, Jilap:	Spontaneous re-inf	flation		А	Spontaneous re-	inflation		А
Total change of course	elera % cc	Less than 360°			A	Less than 360°			A
Collapse on the opposite side occurs	accelerated, max 50% collapse	No			A	No			A
Twist occurs	ma	No			A	No			A
Cascade occurs		No			A	No		15	A
Change of course until re-inflation	se	< 90°	Dive or roll angle	15° - 45°	A	< 90°	Dive or roll angle	15° - 45°	A
Re-inflation behavior	accelerated, max 75% collapse	Spontaneous re-inf	flation		А	Spontaneous re-	inflation		А
Total change of course	elera 5% c	Less than 360°			A	Less than 360°			A
Collapse on the opposite side occurs	acc ax 75	No			А	No			A
Twist occurs Cascade occurs	Ê	No No			A	No No			A
15. Directional control with a maintained asy	nmetric co				A	INO			A
Able to keep course straight		Yes			A	Yes			A
180° turn away from the collapsed side possible	in 10 sec	Yes			^	Yes			
					A				A
					A				A
Amount of control range between turn and stall of	r spin	More than 50% of	the symmetric o	control travel	A		of the symmetric of	control travel	A
Amount of control range between turn and stall of 16. Trim speed spin tendency - 4.4.16	r spin	More than 50% of	the symmetric o	control travel			of the symmetric of	control travel	
16. Trim speed spin tendency - 4.4.16 Spin occurs	r spin	More than 50% of t	the symmetric o	control travel			of the symmetric of	control travel	
16. Trim speed spin tendency - 4.4.16 Spin occurs 17. Low speed spin tendency - 4.4.17	r spin	No	the symmetric o	control travel	A	More than 50% of No	of the symmetric o	control travel	A
16. Trim speed spin tendency - 4.4.16 Spin occurs 17. Low speed spin tendency - 4.4.17 Spin occurs			the symmetric o	control travel	A	More than 50%	of the symmetric o	control travel	A
16. Trim speed spin tendency - 4.4.16 Spin occurs 17. Low speed spin tendency - 4.4.17 Spin occurs 18. Recovery from a developed spin - 4.4.18		No		control travel	A	No No		control travel	A
16. Trim speed spin tendency - 4.4.16 Spin occurs 17. Low speed spin tendency - 4.4.17 Spin occurs		No		control travel	A	More than 50% of No		control travel	A
16. Trim speed spin tendency - 4.4.16 Spin occurs 17. Low speed spin tendency - 4.4.17 Spin occurs 18. Recovery from a developed spin - 4.4.18 Spin rotation angle after release Cascade occurs		No		control travel	A	More than 50% of No		control travel	A
16. Trim speed spin tendency - 4.4.16 Spin occurs 17. Low speed spin tendency - 4.4.17 Spin occurs 18. Recovery from a developed spin - 4.4.18 Spin rotation angle after release Cascade occurs 19. B-line-stall - 4.4.19		No No Stops spinning in le	ess than 90°	control travel	A A A A A	More than 50% of No	n less than 90°	control travel	A A A A
16. Trim speed spin tendency - 4.4.16 Spin occurs 17. Low speed spin tendency - 4.4.17 Spin occurs 18. Recovery from a developed spin - 4.4.18 Spin rotation angle after release Cascade occurs 19. B-line-stall - 4.4.19 Change of course before release		No No Stops spinning in le No Changing course le	ess than 90° ess than 45°	control travel	A A A A A A	More than 50% of No No Stops spinning in No Changing course	n less than 90° e less than 45°		A A A A A A
16. Trim speed spin tendency - 4.4.16 Spin occurs 17. Low speed spin tendency - 4.4.17 Spin occurs 18. Recovery from a developed spin - 4.4.18 Spin rotation angle after release Cascade occurs 19. B-line-stall - 4.4.19		No No Stops spinning in le	ess than 90° ess than 45°	control travel	A A A A A	More than 50% of No No Stops spinning in No Changing course	n less than 90°		A A A A
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16. Trim speed spin tendency - 4.4.16 Spin occurs 17. Low speed spin tendency - 4.4.17 Spin occurs 18. Recovery from a developed spin - 4.4.18 Spin rotation angle after release Cascade occurs 19. B-line-stall - 4.4.19 Change of course before release Behaviour before release		No No Stops spinning in le No Changing course le Remains stable wit	ess than 90° ess than 45° th straight span	control travel	A A A A A A A A	More than 50% of No No Stops spinning in No Changing course Remains stable	less than 90° less than 45° with straight span		A A A A A A
16. Trim speed spin tendency - 4.4.16 Spin occurs 17. Low speed spin tendency - 4.4.17 Spin occurs 18. Recovery from a developed spin - 4.4.18 Spin rotation angle after release Cascade occurs 19. B-line-stall - 4.4.19 Change of course before release Behaviour before release Recovery Dive forward angle on exit Cascade occurs		No No Stops spinning in le No Changing course le Remains stable wit Spontaneous in les	ess than 90° ess than 45° th straight span	control travel	A A A A A A A A	More than 50% of No No Stops spinning in No Changing course Remains stable Spontaneous in	less than 90° less than 45° with straight span		A A A A A A A
16. Trim speed spin tendency - 4.4.16 Spin occurs 17. Low speed spin tendency - 4.4.17 Spin occurs 18. Recovery from a developed spin - 4.4.18 Spin rotation angle after release Cascade occurs 19. B-line-stall - 4.4.19 Change of course before release Behaviour before release Recovery Dive forward angle on exit		No Stops spinning in le No Changing course le Remains stable wit Spontaneous in les 0° - 30°	ess than 90° ess than 45° th straight span	control travel	A A A A A A A A A A A A	More than 50% of No No Stops spinning in No Changing course Remains stable Spontaneous in 0° - 30°	less than 90° less than 45° with straight span		A A A A A A A A
16. Trim speed spin tendency - 4.4.16 Spin occurs 17. Low speed spin tendency - 4.4.17 Spin occurs 18. Recovery from a developed spin - 4.4.18 Spin rotation angle after release Cascade occurs 19. B-line-stall - 4.4.19 Change of course before release Behaviour before release Recovery Dive forward angle on exit Cascade occurs		No Stops spinning in le No Changing course le Remains stable wit Spontaneous in les 0° - 30°	ess than 90° ess than 45° th straight span ss than 3 sec	control travel	A A A A A A A A A A A A	More than 50% of No No Stops spinning in No Changing course Remains stable Spontaneous in 0° - 30°	n less than 90° e less than 45° with straight span less than 3 sec		A A A A A A A A
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16. Trim speed spin tendency - 4.4.16 Spin occurs 17. Low speed spin tendency - 4.4.17 Spin occurs 18. Recovery from a developed spin - 4.4.18 Spin rotation angle after release Cascade occurs 19. B-line-stall - 4.4.19 Change of course before release Behaviour before release Recovery Dive forward angle on exit Cascade occurs 20. Big ears - 4.4.20 Entry procedure Behaviour during big ears Recovery		No No Stops spinning in le No Changing course le Remains stable wit Spontaneous in les 0° - 30° No Standard technique Stable flight Spontaneous in les	ess than 90° ess than 45° th straight span ss than 3 sec	control travel	A A A A A A A A A A A A A A A A A A	More than 50% of No No Stops spinning in No Changing course Remains stable Spontaneous in 0° - 30° No Special device r Stable flight Spontaneous in	n less than 90° e less than 45° with straight span less than 3 sec equired		A A A A A A A A A A A A A A
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16. Trim speed spin tendency - 4.4.16 Spin occurs 17. Low speed spin tendency - 4.4.17 Spin occurs 18. Recovery from a developed spin - 4.4.18 Spin rotation angle after release Cascade occurs 19. B-line-stall - 4.4.19 Change of course before release Behaviour before release Recovery Dive forward angle on exit Cascade occurs 20. Big ears - 4.4.20 Entry procedure Behaviour during big ears Recovery Dive forward angle on exit 21. Big Ears in accelerated flight - 4.4.21 Entry procedure Behaviour during big ears Recovery Dive forward angle on exit 21. Big Ears in accelerated flight - 4.4.21 Entry procedure Behaviour during big ears Recovery Dive forward angle on exit 21. Big Ears in accelerated flight - 4.4.21 Entry procedure Behaviour during big ears Recovery Dive forward angle on exit	arator while	No No Stops spinning in le No Changing course le Remains stable wit Spontaneous in les O ^o - 30 ^o Standard technique Stable flight Spontaneous in les O ^o - 30 ^o Standard technique Stable flight Spontaneous in les O ^o - 30 ^o	ess than 90° ess than 45° th straight span as than 3 sec ess than 3 sec ess than 3 sec	control travel	A A A A A A A A A A A A A A A A A A A	More than 50% of No No Stops spinning in No Changing course Remains stable Spontaneous in 0° - 30° No Special device r Stable flight Spontaneous in 0° bis 30°	e less than 90° e less than 45° with straight span less than 3 sec equired less than 3 sec equired		A A A A A A A A A A A A A A A A A A A
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FTR - Flight Test Report

Manufacturer	swīna	Type testing No.	EAPR-GS-0642/17	JE122
	Swing Flugsportgeräte GmbH An der Leiten 4 D-82290 Landsberied	serial number	1272329852	Messen Prüfen Bewerten Rev. 2.3 - 26.11.2014
Model	Apus RS 23	Location	Gardasee	EAPR GmbH - Marktstr. 11 D-87730 Bad Grönenbach - Germany
Comment		Location	Malcesine, Monte Baldo	

sweise, vervielfältigt werden.

Date of testing	25.04.2017	Minimum take 90 kg		eight	Maximum take 110 k		veight
Testpilot		Pascal Purin			Anselm Rauh		Se
Harness		EAPR			EAPR schwer		13K
Pilot's take off weig	ht	90	kg		112	kg	ANTER A

	Classification	В
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Test-criteria		Minimum take off weight	Evaluation	Maximum take off weight	Evaluatio
1. Inflation / take-off - 4.4.1					
Rising behavior		Smooth, easy and constant rising, no pilot correction required	А	Smooth, easy and constant rising, no pilot correction required	А
Special take off technique required		No	A	No	A
2. Landing - 4.4.2					
Special landing technique required		No	A	No	А
3. Speeds in straight flight - 4.4.3					
Trim speed more than 30km/h		Yes	A	Yes	А
Speed range using the controls larger than 10kr	n/h	Yes	A	Yes	A
Minimum speed		Less than 25 km/h	A	25 km/h to 30 km/h	В
4. Control movement - 4.4.4		Lood than to have	~		2
Max. weight in flight up to 80kg			-		-
Max. weight in flight 80 to 100kg					
			-		-
Max. weight in flight greater than 100kg		Increasing >65 cm	A	Increasing >65 cm	A
5. Pitch stability exiting accelerated flight -	4.4.5				
Dive forward angle on exit		Dive forward less than 30°	A	Dive forward less than 30°	A
Collapse occurs		No	A	No	A
6. Pitch stability operating controls during a	ccelerated t	light - 4.4.6			
Collapse occurs		No	A	No	A
7. Roll stability and damping - 4.4.7					
Oscillations		Reducing	A	Reducing	А
8. Stability in gentle spirals - 4.4.8					
Tendency to return to straight flight		Spontaneous exit	A	Spontaneous exit	А
9. Behaviour exiting a fully developed spiral	dive - 4.4.		Λ	oponianeous exit	
Initial response of glider (first 180°)		Immediate reduction of rate in turn	A	No immediate reaction	В
Tendency to return to straight flight		Spontaneous exit	A	Spontaneous exit	A
Turn angle to recover normal flight		Less than 720°, spontaneous recovery	A	720° to 1080°, spontaneous recovery	В
10. Symmetric front collapse - 4.4.10					
Folding lines used		No		No	
Entry	*	Rocking back less than 45°	A	Rocking back less than 45°	A
Recovery	speed ~ 30%	Spontaneous in less than 3 sec	А	Spontaneous in less than 3 sec	А
Dive forward angle on exit	ads u	0° - 30° Keeping course	A	0° - 30° Keeping course	A
Cascade occurs	t,	No	A	No	A
Entry	_ 0	Rocking back less than 45°	A	Rocking back less than 45°	A
Entry	8		A		,,
Recovery	903 < base	Spontaneous in less than 3 sec	А	Spontaneous in less than 3 sec	А
Recovery Dive forward angle on exit		Spontaneous in less than 3 sec 0° - 30° Keeping course	A A	0° - 30° Keeping course	A
Recovery Dive forward angle on exit Cascade occurs	trim speed	Spontaneous in less than 3 sec 0° - 30° Keeping course No	A A A	0° - 30° Keeping course No	A A A
Recovery Dive forward angle on exit Cascade occurs	50% trim speed	Spontaneous in less than 3 sec 0° - 30° Keeping course	A A A A	0° - 30° Keeping course	A
Recovery Dive forward angle on exit Cascade occurs Entry Recovery	50% trim speed	Spontaneous in less than 3 sec 0° - 30° Keeping course No Rocking back less than 45° Spontaneous in less than 3 sec	A A A A A	0° - 30° Keeping course No Rocking back less than 45° Spontaneous in less than 3 sec	A A A A A
Recovery Dive forward angle on exit Cascade occurs Entry Recovery Dive forward angle on exit	50% trim speed	Spontaneous in less than 3 sec 0° - 30° Keeping course No Rocking back less than 45° Spontaneous in less than 3 sec 0° - 30°	A A A A A A	O° - 30° Keeping course No Rocking back less than 45° Spontaneous in less than 3 sec O° - 30° Keeping course Keeping course	A A A A A
Recovery Dive forward angle on exit Cascade occurs Entry Recovery Dive forward angle on exit Cascade occurs	accelerated > 50% trim speed	Spontaneous in less than 3 sec 0° - 30° Keeping course No Rocking back less than 45° Spontaneous in less than 3 sec	A A A A A	0° - 30° Keeping course No Rocking back less than 45° Spontaneous in less than 3 sec	A A A A A
Recovery Dive forward angle on exit Cascade occurs Entry Recovery Dive forward angle on exit Cascade occurs 11. Exiting deep stall (parachutal stall) - 4.4	accelerated > 50% trim speed	Spontaneous in less than 3 sec 0° - 30° Keeping course No Rocking back less than 45° Spontaneous in less than 3 sec 0° - 30° No Keeping course No No	A A A A A A	0° - 30° Keeping course No Rocking back less than 45° Spontaneous in less than 3 sec 0° - 30° No Keeping course No No	A A A A A
Recovery Dive forward angle on exit Cascade occurs Entry Recovery Dive forward angle on exit Cascade occurs 11. Exiting deep stall (parachutal stall) - 4.4 Deep stall achieved	accelerated > 50% trim speed	Spontaneous in less than 3 sec 0° - 30° Keeping course No Rocking back less than 45° Spontaneous in less than 3 sec 0° - 30°	A A A A A A	O° - 30° Keeping course No Rocking back less than 45° Spontaneous in less than 3 sec O° - 30° Keeping course Keeping course	A A A A A
Recovery Dive forward angle on exit Cascade occurs Entry Recovery Dive forward angle on exit Cascade occurs 11. Exiting deep stall (parachutal stall) - 4.4 Deep stall achieved Recovery	accelerated > 50% trim speed	Spontaneous in less than 3 sec 0° - 30° Keeping course No Rocking back less than 45° Spontaneous in less than 3 sec 0° - 30° No Keeping course No Yes Spontaneous in less than 3 sec 10° - 30°	A A A A A A	0° - 30° Keeping course No Rocking back less than 45° Spontaneous in less than 3 sec 0° - 30° Ves Yes Spontaneous in less than 3 sec 3 sec	A A A A A
Recovery Dive forward angle on exit Cascade occurs Entry Recovery Dive forward angle on exit Cascade occurs 11. Exiting deep stall (parachutal stall) - 4.4 Deep stall achieved	accelerated > 50% trim speed	Spontaneous in less than 3 sec 0° - 30° Keeping course No Rocking back less than 45° Spontaneous in less than 3 sec 0° - 30° O° - 30° Keeping course No No	A A A A A A	0° - 30° Keeping course No Rocking back less than 45° Spontaneous in less than 3 sec 0° - 30° No Keeping course No Yes	A A A A A A A

Recovery		Spontaneous in le	ess than 3 sec		A	Spontaneous in	less than 3 sec		A
Cascade occurs		No			A	No			A
13. Recovery from a developed full stall - 4.	4.13	•							
Dive forward angle on exit		0° - 30°			A	30° - 60°			В
Collapse		No collapse			A	No collapse			A
Cascade occurs (other than collapse) Rocking backward		No Less than 45°			A	No Less than 45°			A
Line tension		Most lines tight			A	Most lines tight			A
14. Asymmetric collapse (trim speed) - 4.4.1	4								
Folding lines used		No				No			
Change of course until re-inflation		< 90°	Dive or roll angle	0° - 15°	А	< 90°	Dive or roll angle	15° - 45°	А
5	trim speed, max 50% collapse		-						
Re-inflation behavior	colk	Spontaneous re-	nflation		A	Spontaneous re-	inflation		A
Total change of course	m sp	Less than 360°			А	Less than 360°			A
Collapse on the opposite side occurs	tri Jax {	No			A	No			A
Twist occurs Cascade occurs		No No			A	No No			A
Change of course until re-inflation		< 90°	Dive or roll angle	15° - 45°	A	90° - 180°	Dive or roll angle	15° - 45°	В
onange of course until te initiation	bse	< 50		10 40	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	30 100		10 40	
Re-inflation behavior	colla	Spontaneous re-	inflation		А	Spontaneous re-	inflation		A
Total change of course	n sp	Less than 360°			A	Less than 360°			A
Collapse on the opposite side occurs	trim speed, max 75% collapse	No			A	No			A
Twist occurs Cascade occurs	E	No No			A	No No			A
		1							A
Change of course until re-inflation	Φ	< 90°	Dive or roll angle	0° - 15°	А	< 90°	Dive or roll angle	15° - 45°	А
Re-inflation behavior	accelerated, max 50% collapse	Spontaneous re-i	oflation		А	Spontaneous re-	inflation		A
	lerat % co		mauoli				mauUII		
Total change of course Collapse on the opposite side occurs	ccel 50%	Less than 360° No			A	Less than 360° No			A
Twist occurs	a max	No			A	No			A
Cascade occurs		No		r.	A	No	1		A
Change of course until re-inflation	Q	< 90°	Dive or roll angle	15° - 45°	А	90° - 180°	Dive or roll angle	15° - 45°	В
Re-inflation behavior	accelerated, max 75% collapse	Spontaneous re-i	inflation		А	Spontaneous re-	inflation		A
Total change of course	klera % cc	Less than 360°			A	Less than 360°			A
Collapse on the opposite side occurs	acce x 75	No			A	No			A
Twist occurs	e E	No			А	No			A
Cascade occurs		No			A	No			A
15. Directional control with a maintained asy	mmetric co	-				Vaa			
Able to keep course straight		Yes			A	Yes			A
180° turn away from the collapsed side possible	e in 10 sec	Yes			A	Yes			A
Amount of control range between turn and stall	or spin	More than 50% c	of the symmetric of	control travel	А	More than 50%	of the symmetric of	control travel	А
		l							
16. Trim speed spin tendency - 4.4.16 Spin occurs		No			A	No			A
17. Low speed spin tendency - 4.4.17		140							
Spin occurs		No			А	No			A
18. Recovery from a developed spin - 4.4.1	B								
	8	Stops spinning in	less than 90°		А	Stops spinning in	h less than 90°		А
Spin rotation angle after release	8	Stops spinning in	less than 90°		A	Stops spinning in	n less than 90°		A
Spin rotation angle after release Cascade occurs	8	Stops spinning in No	less than 90°		A A	Stops spinning ir No	n less than 90°		A A
Spin rotation angle after release	8				A	No			A
Spin rotation angle after release Cascade occurs 19. B-line-stall - 4.4.19 Change of course before release	8	No Changing course	less than 45°		A	No Changing course	e less than 45°		A
Spin rotation angle after release Cascade occurs 19. B-line-stall - 4.4.19	8	No	less than 45°		A	No Changing course		1	A
Spin rotation angle after release Cascade occurs 19. B-line-stall - 4.4.19 Change of course before release	8	No Changing course	less than 45° vith straight span		A	No Changing course	e less than 45° with straight span	1	A
Spin rotation angle after release Cascade occurs 19. B-line-stall - 4.4.19 Change of course before release Behaviour before release Recovery Dive forward angle on exit	8	No Changing course Remains stable v Spontaneous in k	less than 45° vith straight span		A A A A A	No Changing course Remains stable Spontaneous in 0° - 30°	e less than 45° with straight span	n 	A A A A
Spin rotation angle after release Cascade occurs 19. B-line-stall - 4.4.19 Change of course before release Behaviour before release Recovery Dive forward angle on exit Cascade occurs	8	No Changing course Remains stable v Spontaneous in k	less than 45° vith straight span		A A A A	No Changing course Remains stable Spontaneous in	e less than 45° with straight span)	A A A
Spin rotation angle after release Cascade occurs 19. B-line-stall - 4.4.19 Change of course before release Behaviour before release Recovery Dive forward angle on exit	3	No Changing course Remains stable v Spontaneous in k	less than 45° vith straight span		A A A A A	No Changing course Remains stable Spontaneous in 0° - 30°	e less than 45° with straight span	<u> </u>	A A A A
Spin rotation angle after release Cascade occurs 19. B-line-stall - 4.4.19 Change of course before release Behaviour before release Recovery Dive forward angle on exit Cascade occurs	3	No Changing course Remains stable v Spontaneous in k	less than 45° vith straight span ess than 3 sec		A A A A A	No Changing course Remains stable Spontaneous in 0° - 30°	e less than 45° with straight span less than 3 sec	1	A A A A
Spin rotation angle after release Cascade occurs 19. B-line-stall - 4.4.19 Change of course before release Behaviour before release Recovery Dive forward angle on exit Cascade occurs 20. Big ears - 4.4.20	8	No Changing course Remains stable v Spontaneous in li 0° - 30° No	less than 45° vith straight span ess than 3 sec		A A A A A A A	No Changing course Remains stable Spontaneous in 0° - 30° No	e less than 45° with straight span less than 3 sec)	A A A A A A
Spin rotation angle after release Cascade occurs 19. B-line-stall - 4.4.19 Change of course before release Behaviour before release Recovery Dive forward angle on exit Cascade occurs 20. Big ears - 4.4.20 Entry procedure	3	No Changing course Remains stable w Spontaneous in la 0° - 30° No Standard techniq	less than 45° vith straight span ass than 3 sec ue		A A A A A A A	No Changing course Remains stable Spontaneous in 0° - 30° No Special device r	e less than 45° with straight span less than 3 sec equired	1	A A A A A A A
Spin rotation angle after release Cascade occurs 19. B-line-stall - 4.4.19 Change of course before release Behaviour before release Recovery Dive forward angle on exit Cascade occurs 20. Big ears - 4.4.20 Entry procedure Behaviour during big ears Recovery	3	No Changing course Remains stable w Spontaneous in la 0° - 30° No Standard techniq Stable flight Spontaneous in la	less than 45° vith straight span ass than 3 sec ue		A A A A A A A A A	No Changing course Remains stable Spontaneous in 0° - 30° No Special device r Stable flight Spontaneous in	e less than 45° with straight span less than 3 sec equired		A A A A A A A A A
Spin rotation angle after release Cascade occurs 19. B-line-stall - 4.4.19 Change of course before release Behaviour before release Recovery Dive forward angle on exit Cascade occurs 20. Big ears - 4.4.20 Entry procedure Behaviour during big ears	8	No Changing course Remains stable v Spontaneous in li 0° - 30° No Standard techniq Stable flight	less than 45° vith straight span ass than 3 sec ue		A A A A A A A	No Changing course Remains stable Spontaneous in 0° - 30° No Special device ro Stable flight	e less than 45° with straight span less than 3 sec equired		A A A A A A A A
Spin rotation angle after release Cascade occurs 19. B-line-stall - 4.4.19 Change of course before release Behaviour before release Recovery Dive forward angle on exit Cascade occurs 20. Big ears - 4.4.20 Entry procedure Behaviour during big ears Recovery Dive forward angle on exit 21. Big Ears in accelerated flight - 4.4.21	8	No Changing course Remains stable v Spontaneous in li 0° - 30° No Standard techniq Stable flight Spontaneous in li 0° - 30°	less than 45° vith straight span ess than 3 sec ue ess than 3 sec		A A A A A A A A A A A	No Changing course Remains stable of Spontaneous in 0° - 30° No Special device of Stable flight Spontaneous in 0° bis 30°	e less than 45° with straight span less than 3 sec equired less than 3 sec		A A A A A A A A A A A
Spin rotation angle after release Cascade occurs 19. B-line-stall - 4.4.19 Change of course before release Behaviour before release Recovery Dive forward angle on exit Cascade occurs 20. Big ears - 4.4.20 Entry procedure Behaviour during big ears Recovery Dive forward angle on exit 21. Big Ears in accelerated flight - 4.4.21 Entry procedure	8	No Changing course Remains stable w Spontaneous in li 0° - 30° No Standard techniq Stable flight Spontaneous in li 0° - 30° Standard techniq	less than 45° vith straight span ess than 3 sec ue ess than 3 sec		A A A A A A A A A A A	No Changing course Remains stable Spontaneous in 0° - 30° No Special device r Stable flight Spontaneous in 0° bis 30° Special device r	e less than 45° with straight span less than 3 sec equired less than 3 sec		A A A A A A A A A A A A
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